

1928 ELECTRICAL SHOW



April 12-13-14

DYKEMA '28



Champaign-Urbana Division

"If it were possible to visualize our complex daily life of today suddenly set down in the midst of conditions as they were a hundred years ago . . . we could get some idea of the hysteria which would be the result if our electric light and power industry should cease to function."

ERNEST GREENWOOD
author of
"ALADDIN, U. S. A."

Illinois
Power and Light
Corporation

Tennis and Golf Goods

The CO-OP has a large line of these goods by the best makers. The prices are reasonable.

Tennis Rackets from Spalding, Wilson, Magnon and Reach, Wright and Ditson.

Balls—The Official from Wright and Ditson and Pennsylvania. Also the new extra lively W. & D. Ball.

Golf Clubs \$2.00 to \$9.00 each.

Also the popular balls and accessories.

Bags \$1.25 to \$5.50

THE CO-OP

GREEN AND WRIGHT STREETS

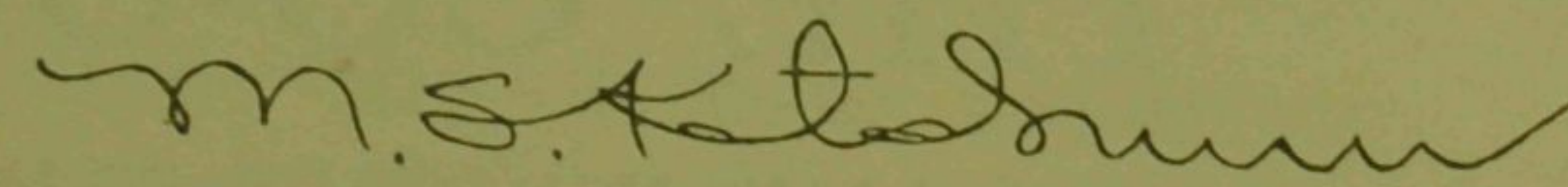
THIS PROGRAM IS THE PRODUCT OF THE

Geo. D. Loudon Printing Co.

114-116 North Walnut Street

Electrical Engineering Show

The Electrical Engineering Show has been given several times with great success. It is an outstanding example of what may be accomplished by the coöperation of the students, the faculty, and the electrical industries. The Electrical Engineering Show is intended to illustrate the progress that is being made in the application of electricity to industrial activities. All exhibits, whether they be of an educational nature or in the nature of "freak stunts", are intended to show the advance in the field of electrical equipment. With the experience gained from preceding shows, the Electrical Show this year should be an outstanding success.



Dean, College of Engineering.

In Appreciation

The tremendous amount of work necessary to stage the 1928 Electrical Show could not have been done without the cooperation of the faculty and the untiring efforts of the students in the department. For the success of the show we must first thank them. Then, to the exhibitors who have brought their products and men here, and to the Department of Physics, to the various departments in the College of Engineering, and to the Council of Administration, we extend our sincere appreciation. To all who have worked to make the show a success, we say, "Thank You!"

The Board of Managers.

1928 Electrical Engineering Show

UNIVERSITY OF ILLINOIS
URBANA, ILLINOIS

APRIL 12, 13, 14, 1928

Matinee April 14

GYM ANNEX

E. E. LABORATORY

ENGINE ANNEX

Sponsored by the E. E. Society

FACULTY, DEPARTMENT OF ELECTRICAL ENGINEERING
PROFESSOR E. B. PAINE, Head of the Department

PROF. MORGAN BROOKS

PROF. A. R. KNIGHT

MR. C. A. KEENER

MR. J. O. KRAEHNBUHL

MR. S. E. SKRODER

MR. A. W. HERSHEY

PROF. E. H. WALDO

PROF. E. A. REID

PROF. H. A. BROWN

MR. L. B. ARCHER

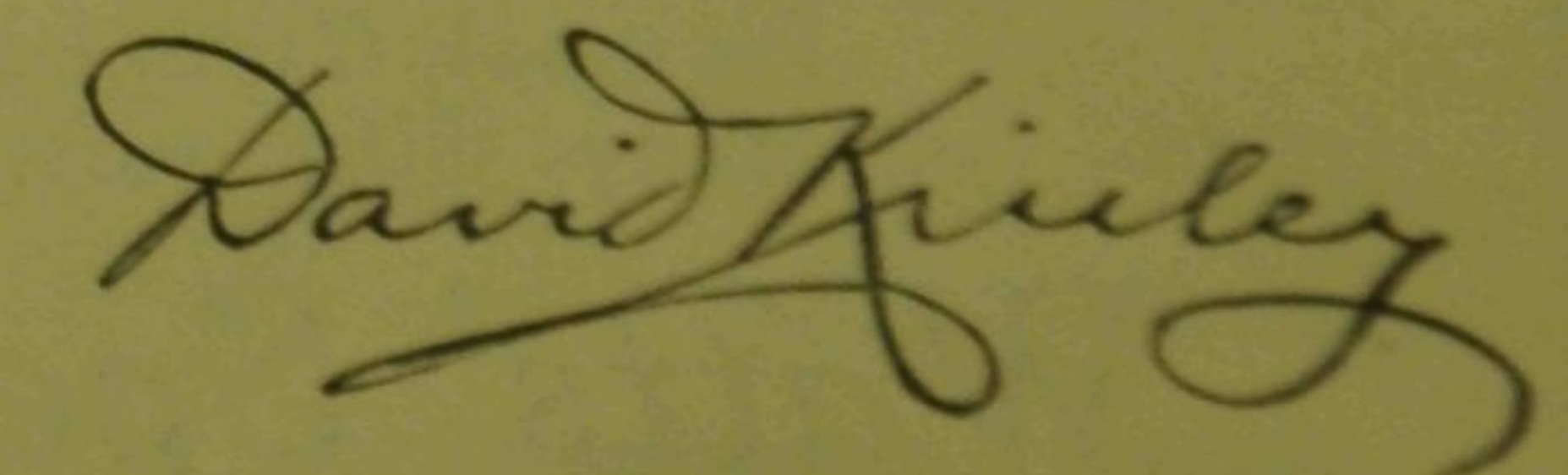
MR. M. A. FAUCETT

MR. H. F. HUFFMAN

MR. R. E. TARPLEY

Laboratory Shops, W. S. GOODSPEED
JOHN WARSAW.

I have always encouraged extra-curricular activities because of my belief that they contributed to the development of character through loyalty, coöperation, forbearance, sacrifice, honesty, integrity, and unselfish leadership. My support is doubly strong when the "activity" has the added advantage of being educational as well. It is my hope that the Electrical Show will prove so successful that others will be tempted to follow the example of the electrical engineers in turning their surplus energy into such helpful auxiliary activities.



Urbana, Illinois,
March 27, 1928.

SERVICE THAT SAYS
"THANK YOU"
THE URBANA BANKING COMPANY

Capital
 \$100,000.00

Surplus
 \$90,000.00

Want to Find Something?

LOOK IN THE
I N D E X

Pages 28, 30, 31, 32

*We Can Serve You Promptly With Student
 Supplies of All Kinds*

Thesis Paper, Thesis Title Pages Printed,
 Personal Cards—Printed or Engraved.
 Many Gifts, suitable for any occasion.

Watts' Specialty Shop

1204½ W. California Avenue



Swartz, Greene, Hackbarth, Springer, Christman, St. Pierre, Wright,
 Rebuffoni, Hull.

BOARD OF MANAGERS

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C. W. SWARTZ.....	Personnel

Carbon the magnificent

ABOUT a hundred years ago Sir Humphry Davy proved conclusively that the diamond is but pure crystallized carbon—merely carbon that has put off its working clothes of charcoal, coal and coke, soot and smoke, and put on formal attire.

Carbon, said Sir Humphry, would find better things to do than act as the sparkling symbol of wealth, pomp and power, or to burn in grates, stoves and furnaces. Workaday carbon, black carbon, he thought, would eventually bring mankind such precious gifts that one day's enjoyment of them would give the world riches exceeding all the diamonds ever mined.

As an earnest of the newly discovered properties of carbon, he produced the first electric arc light, using two pieces of charcoal. It was the most brilliant light mortal man had ever struck, and it came from the blackest of all substances.

Were this scientist to return to us today he would be astounded by the extent to which his prophecy has been fulfilled. For carbon has transformed the world. Without carbon, electricity would still be a laboratory curiosity. With carbon brushes, electricity has become nature's most gorgeous gift to man.

The National Carbon Company is proud to have played a leading part in carbon's progress, most of which has been made since the company's organization in 1886, and a great part of it in the NCC laboratories.



NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation

Carbon Sales Division

Cleveland, Ohio

San Francisco, Cal.

Branch Offices and Factories

CHICAGO, ILL.

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BIRMINGHAM, ALA.

FOREWORD

By N. N. WRIGHT

The password of the Engineer today is COOPERATION. No business organization, no manufacturing company—no not even a political campaign can succeed without cooperation.

The 1928 Electrical Show has been made possible only by this one word. Students, faculty, business men, merchants, and manufacturing companies have realized the usefulness of the Show and by their whole-hearted, unflinching, hundred-percent cooperation have put across an enterprise that has not failed.

The burden of the responsibility has fallen upon the Electrical Engineers of the Class of 1928. Upon their shoulders the problems of organization, operation, and management have descended and they have looked upon their task with the smile and determination that characterizes only those whose motto is Cooperation and Service.

The purpose of the Show is threefold. First it is educational. Today we are in the beginning of an age of specialization and rapid advancement in science. What is new today is obsolete tomorrow and what yesterday existed only as the wildest dream of a wizard, today exists as a reality in every household.

The public must be acquainted with these changes and it is through the media of exhibitions and shows that knowledge and understanding is brought to the people. Yesterday it was "Friends, Romans, Countrymen, lend me your ears"—today we hear, "WRM—please stand by for station announcements."

Secondly the Show is entertaining and amusing. Today tired business men must have their bootlegger, the office girls their movies, and the general public their vaudeville. The E. E. Show attempts to please everyone, with stunts from overflowing wine bottle, the elixir of happiness, to movie scenes depicting modern science at its very worst. What may be dull to one is interesting to another; and to those who imagine they have "it"—or a keen sense of judgment, the Show also offers its amusements.

Then thirdly, and by no means last in importance, the Show is a financial aid to deserving students. Profits of the Show are placed in a trust fund which will later develop into an "Electrical Engineering Student Loan Fund." The fund will be placed at the disposal of those deserving engineers whose financial resources are not sufficient to put them through school. Such a fund is made possible by the unerring foresight of the engineers of yesterday and today, in cooperation with those of tomorrow, so that the good work so easily started may be perpetuated in years to come—for service to their fellow men.

GYMNASIUM ANNEX

1. An Indication of PROGRESS

The old Edison Bi-polar machine was in use forty years ago by the Commonwealth Edison Company in Chicago. It represents one of the earliest types of direct current generators. The machine beside it is one of the latest models of General Electric direct current generators. Note the difference in size for approximately the same rating.

2. Fuelless Motor

This motor is kept running by utilization of the earth's magnetic field and energy from the atmosphere.

M. E. Swift '29, R. Ruddock '29.

3. Electrical Indicating Instruments

INSTRUMENTS are the backbone of the electrical industry. This exhibit shows some of the popular models of WESTON Indicating Instruments.
Westburg Engineering Company.

4. The World's Largest Atom

An enormously magnified Hydrogen atom with its planetary electrons rotating in space (according to the Bohr Conception) is represented by the arrangement demonstrated. The atom is magnified 20,000,000,000 times.
H. Levy '29, F. D. Temple '29, C. F. Huguet '29.

5. TELEVISION

This comparatively simple set of apparatus transmits and receives moving images over wires. The Photo-Electric Cells which are probably the largest in existence were made here at the University by L. P. Garner.

Most of the remainder of the equipment was made by the students listed below:

W. N. Parker '28	R. L. Gougler '29
L. P. Garner, Grad.	R. E. Waggener '31
H. H. Slocum '28	W. P. Burglund '31
F. W. Wodrich '28	A. F. Stuttle '29
J. L. Wiegreffe '29	D. L. Humm '31

6. Some of the "Wonders" of electricity (or E. E.?)

- (a) Perpetual Motion Machine
- (b) Electric Time
- (c) Personality Indicator
- (d) Earth Inductor Compass

K. R. Morris '28, W. B. Cheney '28.

7. Carbon Products

Carbon is one of the most important materials used in the electrical industry. Brushes for electric motors, generators, and convertors, together with welding carbons, illuminating carbons, and several specialties are shown.

NATIONAL LAMP WORKS

OF

GENERAL ELECTRIC COMPANY

THROUGH THE

MIDLAND DIVISION

CHICAGO

Has Furnished Material for

EXHIBIT NO. 24

as an educational exhibit, suggesting something of the history and evolution of artificial light sources and their application.

PREHISTORIC MAN

first used a fire brand as a light source, probably for purposes of protection.

From ancient historic days until the present century, various forms of oil lamps (hard oil in the case of candles), were used and many architectural motifs and interior conceptions still contemplate such illuminants.

None of these light sources were seriously considered as an aid to discriminating vision, because of their obvious limitations and

TWENTIETH CENTURY LIGHTING

may be of such a quality and quantity as to satisfy any requirements, duplicating daylight conditions in results obtained.

Not only is this possible but the improved results in increased production, better selection in stores, improved eye conservation, etc., due to such proper and adequate illumination, have proven to be

ECONOMICALLY PRACTICAL.

Example: If lighting a standard schoolroom according to the BEST practice for offices will result in passing one student, who would otherwise have failed, the DOLLAR SAVING to the institution in avoiding this one repeater student will be more than enough to have paid the expense for such lighting for the entire year. Less concrete but perhaps more valuable benefits would include

GREATER EYE CONSERVATION,
IMPROVED MORALE, etc.

MIDLAND DIVISION

maintains a

LIGHTING SERVICE DEPARTMENT

at 222 W. Adams St., Chicago

under direction of

L. V. JAMES '06, '12, '13, U. of I.

for the benefit of its customers.

8. S. and C. High Voltage Protective Equipment

Schweitzer & Conrad extra high potential Fuses are exhibited, in sizes from $\frac{1}{2}$ to 400 amperes, and 7,500 to 132,000 volts. Also potential transformer protective combinations and high voltage switching equipment are on display.
Schweitzer & Conrad, Inc.

9. Products from "GE" laboratory and factory

This exhibit shows some of the latest developments in the laboratory of one of the largest of manufacturing companies. A Photo Electric Cell, Magnetron Tube, Streamer Discharge, Selsyn Motor, Mercury Vapor and Neon Lamps, and Fused Quartz are shown.
General Electric Company.

10. Nature's Own Study Lamp

A study lamp, using the principle of the fuelless motor recently presented to the patent office, has been developed in the E. E. Department and is here shown for your inspection.
C. Perkins, A. W. Howell '28.

11. The Latest in Lighting for Public Buildings

An exhibit of X-Ray Reflectors and other products showing the best engineering practice in the field of illumination.
Curtis Lighting, Inc.

12. Reinhartz Modulascope

The apparatus shown is used to study the amount of modulation of transmitting apparatus.
I. A. Rockman '30, A. J. Rack '30.

13. Lightning and Your Radio Aerial

This exhibit shows how an improved lightning arrestor protects your home and family if lightning should strike your radio antennae.
C. F. Gehant '28, S. D. Craine '28.

14. Mysterious Separation of Colors.

This principle is being "applied" in New Zealand for the separation of black and white sheep.
J. V. Kurtinaitis '28, Max Zaverschnik '28.

15. The Electric Chair

The modern instrument of Justice! Gray, Snider, and others have gone to their fate in a chair like this.

All ye lady-killers and all ye man-mashers, take home a personal photograph from the 1928 E. E. Show.

A. B. Chapman '28, E. E. Nield '28, T. D. Hartsell '28,
H. A. Wenzel '30, S. A. Crowder '31.

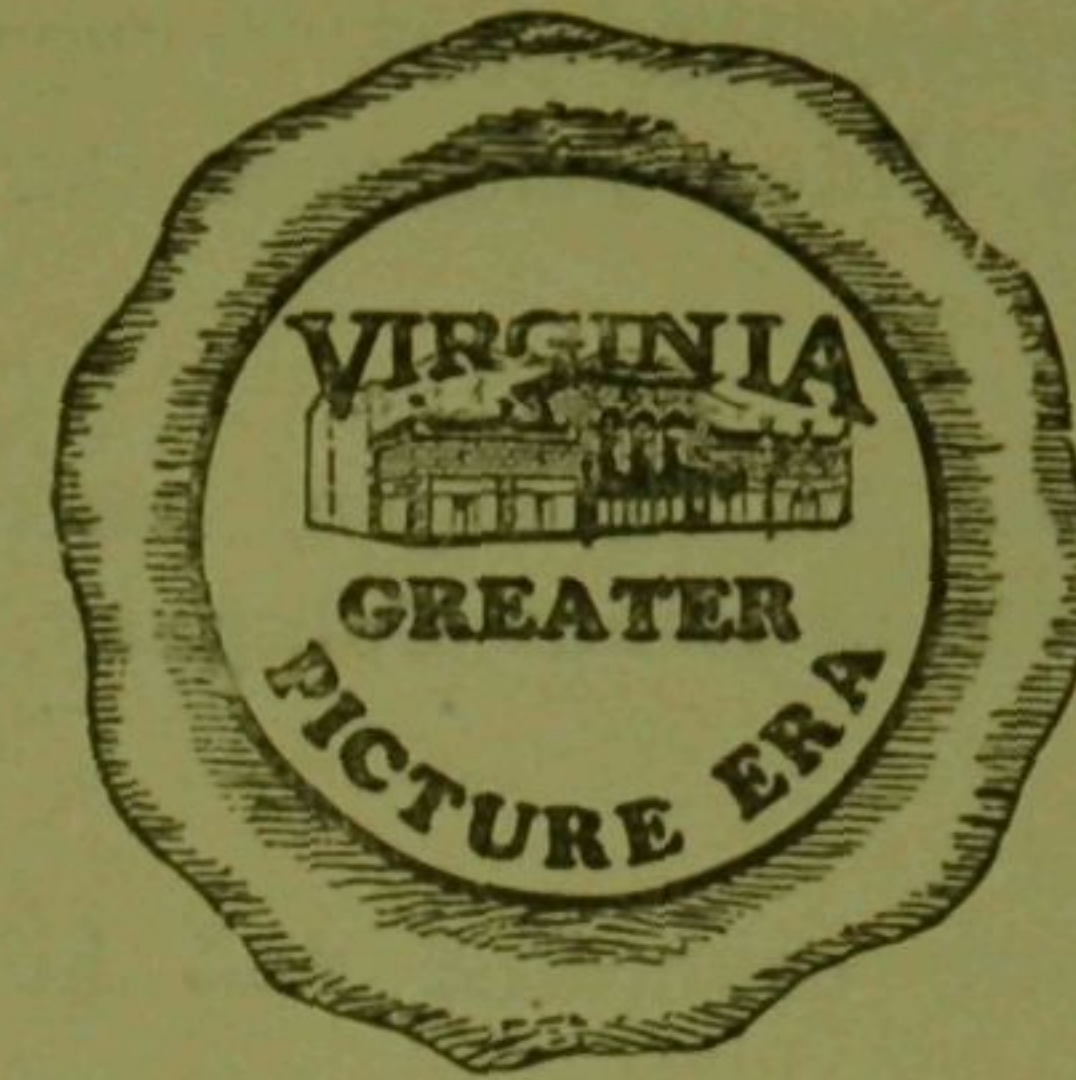
16. Ring the Peg

The same old game in a different way. Try your luck and watch the results.

N. W. Pate '28, G. R. Black '28.

17. Electricity and a Modern Car

The chassis exhibited shows the "inside dope" on the new Buick.
Champaign Buick Co.



Friday and Saturday

WILLIAM
HAINES

in
"THE
SMART SET"

"A Smart Picture
for Smart People"
Popular Prices

ELECTRICITY and the MOVIES

Have you ever stopped to think that without electricity there would be no "movies"? Electricity made motion picture entertainment safe and practicable. It has made it possible for us to present a "new era" of pictures, due to better electrical "lighting" and "effects" now being used in the great studios. Some of these pictures which should be on your "must see" list

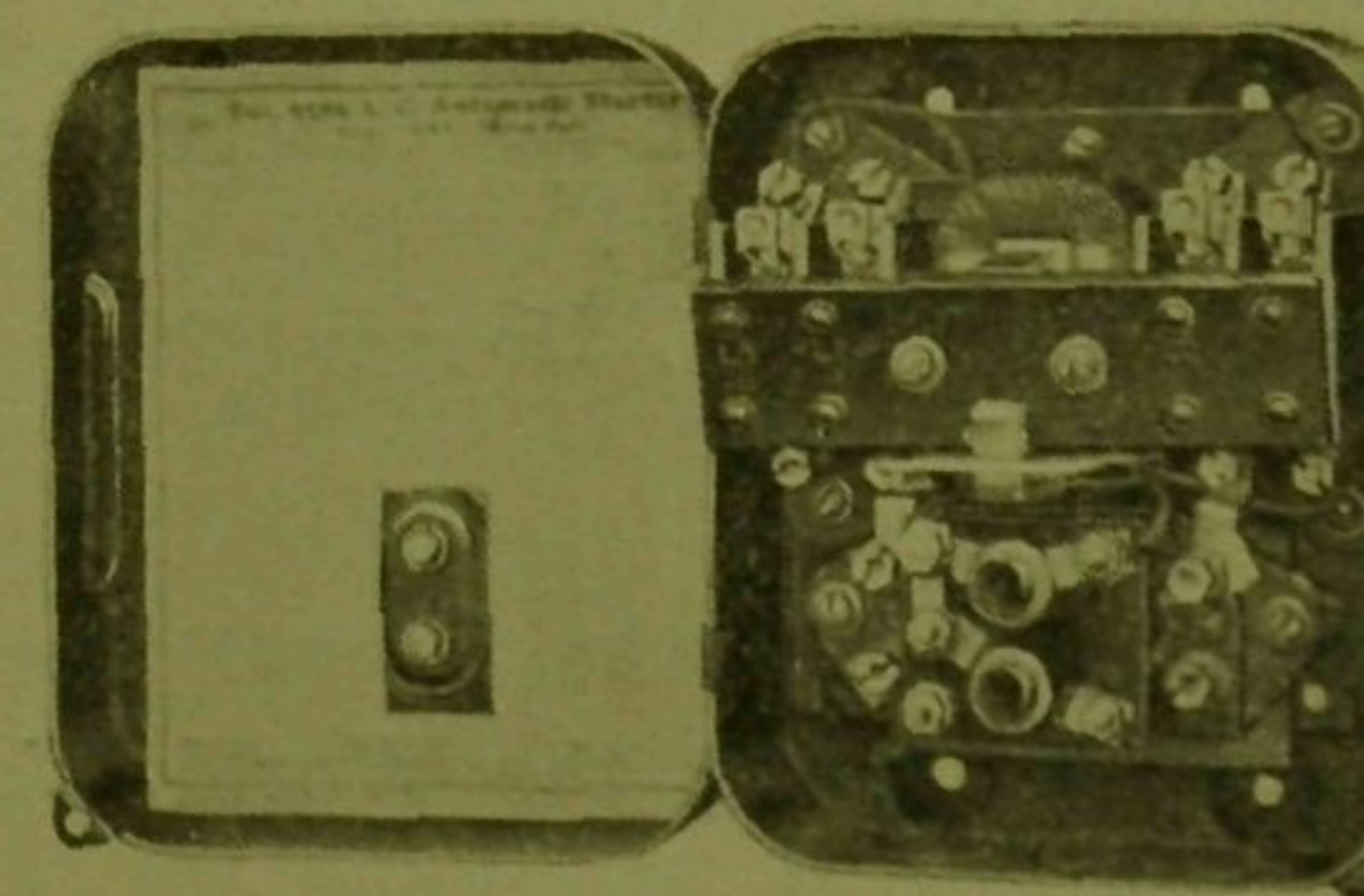
are

Corrine Griffith in "The Garden of Eden"
Harold Lloyd in "Speedy"
Dolores Del Rio in "Ramona"
Mary Pickford in "My Best Girl"
Gilda Gray in "The Devil Dancer"
"Gentlemen Prefer Blondes"
James Cruze's Masterpiece "Old Ironsides"
Air Epic "Legion of the Condemned"

INDUSTRY IS MOTORIZED

—but only **CORRECT CONTROL** makes it efficient

In industry today, there are millions of horsepower—brute force—the working capacity of electric motors. This brute force must be correctly controlled to be truly effective. For many years Cutler-Hammer engineers have concentrated on obtaining maximum efficiency from motor and machine through the application of "correct motor control."



The new C-H 9586 Type "AAA" Across-the-Line A. C. starter has set a new high standard in efficient control design. In size it is no larger than the ordinary 'phone box, and it provides complete overload protection and handles motors up to 5 HP.

It is a complete automatic motor control unit in itself. The start and stop buttons are mounted in the cover. The small size permits mounting the starter itself at the operator's working position instead of the customary pushbutton station.

The new roller contacts are of the double break type, cadmium plated, and by breaking the arc in two places, give several times the life of ordinary contacts. In addition, the contact rollers turn after every operation to present a new contact surface for the next operation.

Control is not confined to the use of the pushbuttons in the case. One, or a number of pushbutton stations may be placed at any location desired.

The CUTLER-HAMMER Mfg. Co.
Milwaukee, Wisconsin

18. Printing Telegraph

This Western Union Simplex Printing Telegraph is used for the automatic transmission of messages without the use of an intermediate code.
Western Union Telegraph Co.

19. Specialties in Lighting

An exhibit of air-port projectors, floodlights and traffic signal material.
Craus-Hinds Company.

20. Series Street Lighting

This exhibit illustrates how the street lights are connected and how a constant current is maintained through all lamps.
R. F. Rice '28.

21. Supervisory Remote Control

The individual contactors are operated by various frequencies. These contactors separate the various frequencies in the incoming current.
W. A. Mavity '28, M. C. Solomon '28.

22. Electron Glee Club

The howling of a radio received may be made to produce pleasing sounds if properly controlled. The Electron Glee Club consists of several radio receivers combined, each howling its own sweet (?) note. The demonstration proves that electrical control is all that is necessary for your "howler."
R. C. Ballard '28, L. P. Morris '28,
R. B. Coombe '28.

23. "Radiolas" and "Radiotrons"

An exhibit of the latest "R C A" radio apparatus, showing "All Electric" operated Radiolas and Speakers.
The Tuscola Radio Supply Station.

24. National Lamps

This display shows some of the interesting points in the history and manufacture of incandescent lamps.
The display was set up by students, the plan and equipment being supplied by the manufacturer.
Midland Division—National Lamp Works, of G. E. Co.

25. Automatic Telephone

The apparatus used in this exhibit is exactly the same as that used in the Champaign-Urbana service. The students in charge assembled the "exchanges" used.
R. T. Pennoyer '29, W. H. Harszy '29.

26. Signal Corps Exhibit

Here is shown the various types of equipment used in the Signal Corps division. Equipment such as this was used extensively during the World War.
J. S. Clark '28, W. M. Woodruff '29, H. M. Wood '29,
J. R. Remey '31, E. W. Pride '30, L. G. Ramer '30,
E. J. Pouzar '31.

27. Illuminating Effects

Variation of the intensity, direction, and color of illumination produces grotesque effects. It is most interesting to see the effect of colored lights on the pseudo—"school girl complexion."
E. W. Waldman '28, C. S. Wickstrom '28.

The BELL SYSTEM

invites you
to an exhibit which shows how
Dial Telephone apparatus is tested
to insure proper functioning
of the telephone plant.

ILLINOIS BELL TELEPHONE COMPANY,
O. F. CLARK, Local Manager

The Pearl Confectionery and Cafe

GOOD THINGS TO EAT
GOOD THINGS TO DRINK

The Cleanest Place in the Twin Cities

E. M. MOLL, Manager

613 S. Wright St.

Champaign

28. Chem. Stunts

(a) Sodium Plating

Sodium is passed through the glass of the light bulb and is plated on the inside surface of the bulb.

(b) Electrostatic Dust Remover

This identical principle is used in removing the dust from chimney gasses and the stacks of blast furnaces.

R. H. Appleby '29, F. W. Hornberger '29.

29. (a) Public Address System

The Public Address System which is loaned by the Illinois Bell Telephone Co. is used for announcement purposes in large auditoriums.

(b) An "Infallible Trouble Shooter"

This demonstration shows how equipment in your telephone exchange is tested automatically before it leaves the factory.

Western Electric Company.

30. The "It" Meter

Have you got "It"? Find out here. See if you need to develop your "It" or if you have an excess.

J. D. Hieronymus '28.

32. Modern Airport

This exhibit is a replica of a modern landing field. The noise of an approaching aeroplane causes the airport lights to go on automatically.

F. W. Wodrich '28, L. H. Hull '28.

33. Bremer-Tully Radio

An exhibit of cabinet models of up-to-date alternating current electric radios.

Folks Electric Shop.

34. Universal Appliances

The ranges, sweepers, toasters, and other appliances in this booth are UNIVERSAL products.

Landers, Frary and Clark.

35. Cable Car

Cable cars are frequently employed in very mountainous districts for the transportation of passengers and freight. They provide the shortest path from one point to another through space, and thus effect a saving of many times the distance traversed.

F. W. Wodrich '28.

36. Exide Batteries

The making and "makeup" of storage batteries is of interest to everyone. Here are some facts about one of the best-known makes.

Exide Battery Company.

37. (a) Electricity From Liquid Air

Extracting electric current from the atmosphere! Tapping the World's GREATEST STORAGE BATTERY: The Future Power House.

(b) A. C. and D. C. Lights

Can you tell A. C. and D. C. light? Step up and TRY!

V. A. Clemens '28.

Experimental Electrical Engineering

At no time in the history of the development of our civilization has laboratory research and the verification of theoretical conclusions in the laboratory been as important as it is today. The laboratory of the General Electric Company is one of the oldest and largest.

From this laboratory we have, in Exhibit number 9, a display of a photo electric cell, magnetron tube, streamer discharge, selsyn motor, mercury vapor and neon lamps, and fused quartz.

38. Electric Clocks and Meters

An exhibit of Sangamo electric clocks and electric meters. Other things shown are more Sangamo products.

Sangamo Electric Company.

39. Jewell Instruments

A display of measuring instruments including indicating voltmeters, ammeters, and wattmeters; portable and switchboard types. Also, instruments for Radio and Radio-servicing.

Jewell Electrical Instrument Co.

40. (a) The Everflowing Wine Bottle

Gaze with longing eyes upon the scene before you. What wouldst thou give for such equipment.

S. A. Richards '28, W. C. Rosborough '28.

(b) The Human Welder

Here you may watch the electric welding process carried out by an abnormal individual whose constitution allows the current to be passed through his body. No harmful effects can be detected.

E. K. Nelson '29.

41. (a) Dean Automatic Valve Operator

Remote control of valves in a plant may be affected by using these Dean System Valve Operators..

(b) Demonstration Panel

Showing an automatic starting panel made for demonstration purposes.

Cutler-Hammer Manufacturing Co.

42. Rope Pump.

This is an exhibit showing some of the principles of hydraulics.

R. C. Naumann '28.

43. Models of Geysers—Yellowstone National Park

Steaming Geysers and boiling springs are found in this presentation. Mechanical replicas of one of Nature's most inspiring sights spout and boil in a natural colorful setting as regularly as "Old Faithful" or "Minute Man." Time them yourself. They show the action, appearance, and characteristics of the originals in miniature. Make a trip to Yellowstone by stopping at this booth.

E. B. Noel '28.

F. R. Jordan '30.

W. L. C. Williams '29.

44. The Disappearing Fish

"Now you see them and now you don't." Explain it for yourself.

G. R. Morton '28.

45. Miniature Motors

(a) The small revolving models illustrate exactly the principles of the various electric motors used in practice.

(b) Another perpetual motion machine. See it for yourself.

W. W. Kuehl '28, V. G. Politsch '28, F. T. Brewer '29.

Illinois' Only Co-operative Bookstores

TWO STORES

202 South Mathews

610 East Daniel

Illinois' Only Co-operative Bookstores—originally started by Engineers—now under the control of Engineering Students—are fully equipped to care for the needs of all Engineers at Illinois.

Familiarize yourself with your stores and learn the value of Co-operative buying.

THE REAL CO-OP
ENGINEERS' CO-OPERATIVE SOCIETY

Illinois' Only Co-operative Bookstores

46. Rural Electrification by Radio

Transmission lines are expensive, and the customers eventually pay for them. This exhibit, consisting of a model-size rural home, shows how the expense of transmission "may" be eliminated by lighting the home by radio.
P. F. Schwarzlose '28, J. G. Waggoner '28.

47. A Model Electric Kitchen

A peep into the future? Who knows? Maybe in a few years all our kitchens will look like this. We hope so!
Illinois Power & Light Corporation.

48. The Automatic Radio

After years of ceaseless effort we have assembled a set which operates successfully beyond our fondest expectation. Ask for any station you desire. It will respond instantly.

L. H. Hull '28, F. W. Wodrich '28,
L. C. St. Pierre '28.

49. The HOOVER in action

"It Beats, as it Sweeps, as it Cleans." More D. P. M.—Dirt Per Minute—with this, the latest model Hoover.

The apparatus used in this demonstration has been shown only once previous to this time, and that was at the Sesquicentennial two years ago in Philadelphia.
The Hoover Co.

50. The Electric Pencil

Don't leave the building until you have in your possession an autographed souvenir of the show. Write your own name with electricity.

F. A. Cox '28, J. L. Worden '28, O. F. Fosha '29.

51. The Annex Substation

(a) Control Boards and D. C. Supply

All the power used in the building is controlled and the direct current is supplied from this substation. It was designed and built by students.

F. J. Christman '28, H. F. Moore '28,
G. A. Willis '30, M. J. Meling '31.

(b) Theater Lighting Control

This Berthold Selectrolite system is similar to that used in the most modern theaters. It is used to control the flood lights on the front of the building and various spotlights inside.

Berthold Electric Co.

52. Cost of Household Appliances

Learn how much your various electrical appliances are costing you each hour while in operation. Here are given the bare facts. Take advantage of them.

F. A. Cox '28.

54. The Whip Motor

A modern use for the buggy whip—turning the wheels of industry.
W. R. Nelsch '30, C. E. O'Donnell '30.

55. "Safety First"

A first aid squad has been organized to take care of anyone who may be injured during the show. We hope they will be "jobless".

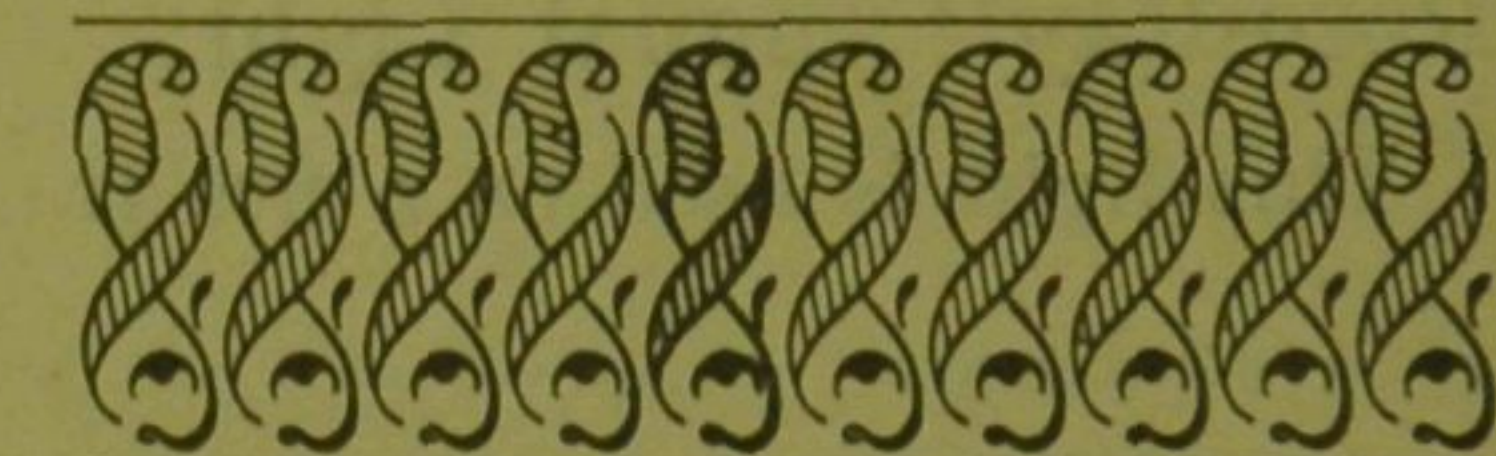
J. S. Clark.

Come to Curtis with your lighting problems

*Engineered
Illumination
for*

Churches
Offices
Schools
Banks
Theaters
Factories
Libraries
Lodges
Public Buildings

THE main offices of a large group of luminaire designers and trained illuminating engineers are at your disposal here in Chicago. These men, the majority of them graduates of the University of Illinois, are anxious at any time to give you suggestions for lighting any type of interior or exterior.



Curtis Lighting, Inc.

Makers of X-Ray Reflectors

1119 West Jackson Boulevard

Chicago, U. S. A.

New York Office . . . 31 West 46th Street

Resident Engineers in all Principal Cities

STRAUCH PHOTO-ART HOUSE

At Campus, 709 South Wright

THE HOME OF GOOD PHOTO FINISHING

Costume Jewelry, Stationery, Pottery, Leather and Metal Gifts
Greeting Cards for All Occasions
Orthophonic Victrolas and Records

ENGINE ANNEX

Making Light of the Mystery

An educational and entertaining film put on by the Chicago Central Station Institute, which is the educational branch of the Insull properties.

ON DISPLAY OUT-OF-DOORS

1. Lights on the Radio Towers.

This is merely a string of lamps put in place by the students.

2. "Roto-Ray" Signal Light.

This light is used on a fire truck as a warning signal.
Champaign Fire Department.

3. Large Arrow Sign.

Another sign composed of a string of electric lights made by the students in charge of electrical wiring.

CALL FOR
CHAMPAIGN ICE CREAM COMPANY'S

Ice Cream

PHONE 4175

PHONE 4176

KAUFMAN'S

2 STORES

ON THE CAMPUS
607 E. Green Street

DOWNTOWN
16-18 Main Street

Women's Specialty Shops...2nd Floor Downtown Store

4. ELECTRIC FOUNTAIN SIGN

The idea from which this sign came was developed by C. G. Doerr. Plates placed in a stereoptican machine are projected on the screen of water from behind it. As far as is known, the principle has never before been used out-of-doors.

C. G. Doerr, '28.

5. The Traveling Electric Sign

This apparatus was originally designed a number of years ago at this university. Lately, similar signs have been operating throughout the commercial world.

J. P. Schrader '28, S. M. Babcock '29, J. H. Manley '29,
E. K. Nelson '29, F. W. Hornberger '29.

6. WRM.

The University radio station will be open for inspection at all times during the Show.

F. M. Schmidt '29, C. E. Huffman '31, J. C. Bayles '29.

Citizens State Bank

CHAMPAIGN, ILLINOIS

CAPITAL AND SURPLUS, \$200,000

FRIENDLY SERVICE

ELECTRICAL ENGINEERING LABORATORY

1. Museum.

See equipment that was not even invented in your grandfather's day and which is now obsolete and has been replaced by newer and better machinery.

2. Department Shop.

Damaged equipment is repaired and special apparatus is made in the shop.

3. High Frequency Research Laboratory.

Research work is carried on here on radio waves from 1 to 6 meters long and also on vacuum tubes.

4. Research Laboratory.

Studies of the effect of temperature on the accuracy of meters and relays and also studies of higher harmonies produced in transformers are being carried on in this laboratory.

5. Storage Battery Room.

Here are located many storage batteries with necessary switch board and upkeep equipment. Direct current for research purposes is obtained from these batteries—They will furnish as high as 300 volts.

PRODUCTS FROM THE DEPARTMENT OF PHYSICS

6. Geissler Tubes.

The display of tubes shown includes almost everything obtainable in this line.

7. Induction Coil

The induction coil is used to obtain high voltages for the operation of the different parts of the exhibit.

8. Mercury Vapor Pump.

This is a three-stage mercury vapor pump which was designed by Dr. Knipp.

9. X-Ray Demonstration.

X-Rays are one of the most useful of medical tools today. The "set-up" shown is typical.

10. Production of Cathode Rays

Electricity has been used extensively in research in physics. One of the principal applications is in the study of the behavior of electrons through cathode ray discharges similar to those obtained here.

Physics Department Exhibit—R. L. Edwards' '29.

L. Y. Lacy '29, H. D. Wear '29.



"The Illini"

Sleeping Car Train

This comfortable and convenient sleeper via Illinois Traction System is operated nightly between Champaign-Urbana and St. Louis.

Named in honor of that great host, past and present, to whom the University of Illinois is more than "just another university," this train is designed to serve, with every modern travel convenience, traction patrons in this part of the state.

Reservations may be made and tickets purchased at either the Champaign or Urbana ticket offices of Illinois Traction System.

Illinois Traction System

11. High Tension Laboratory.

In this laboratory a cooperative research on testing of cables is being conducted by members of the faculty. Much valuable information has been worked out by the tests conducted in this room.

12. 100 K. W. Set.

So much noise was produced that a sound proof wall was built in order that classes would not be disturbed. Any one of the three generators can be made to supply power for the laboratory.

13. Bucking Bronco.

Electrical engineers have dreams that look like this after a hard day spent in the lab., trying to make machines run without balking.

14. Induction Furnace.

By means of very high frequency voltages, eddy currents are set up in a piece of iron. They heat it and cause it to melt.

R. B. Coombe '28, L. P. Morris '28.

15. Calibration Laboratory.

All the laboratory meters are repaired and re-calibrated here. Standard instruments used in this laboratory are checked by the Bureau of Standards.

16. Communication Laboratory.

Here many of the problems of communication over long distances are worked out. Artificial long distance lines are erected and operate under actual conditions.

17. 85 K. W. Motor Generator Set.

This set consists of an alternating current motor driving a direct current generator which supplies the laboratory with direct current.

18. 45 New Set.

This set consists of an AC synchronous motor directly coupled to DC generator and is only used in cases of heavy loads on the system. It has a capacity of 45 Kilowatts.

19. Instrument Exhibit.

Instruments used by students in their laboratory work. N. B.—All these meters work!

20. Main Switch Board.

Any of the apparatus in the laboratories may be inter-connected by means of this board.

21. Recording Wattmeter.

This instrument records the power being used at all hours of the day and night.

W. Lewis & Co.

CHAMPAIGN

You can depend upon W. Lewis & Co.
Merchandise and Service!

22. Man-Made Lightning.

About 1890 Nikola Tesla discovered that very high voltages may be produced by discharging a large condenser through the primary of an air core transformer, which has few turns, the secondary having many turns. The apparatus is hence named a "Tesla Coil."

More than 1,000,000 volts potential is necessary to make the sparks crash across the spark gap between the two wires used as electrodes.

G. T. Bennett '28, W. Dueringer '28, E. Gara, '28,
R. D. Merrill '29, H. S. Lacey '31.

23. Automatic Reclosing Circuit Breakers.

These breakers open in case of short circuit or serious overload, and close automatically when the line is clear.

DRUGS

TOILET ARTICLES

The Corner Drug Store

B. E. SPALDING, Proprietor

Green and Sixth Streets

PERFUMES

PRESCRIPTIONS

24. "Fool Proof" Motor.

This machine cannot be injured by the operator because to start or stop it, he has only to turn the controller handle. Automatic relays control the supply of power to the motor.

25. The Automatic Elevator.

An elevator controlled from a push button switch board located on the lower part of the shaft. This type of elevator is in practical use. The elevator in the Administration Building is operated on this principle.

D. J. Goodman '28, W. B. Gould '28.

26. Rotary Converter and Switchboard.

This machine rectifies from alternating to direct current. Machines of this type are used in substations that supply power for traction service.

27. Synchronizing Alternators.

The variation of light in the lamps shows when the generators are running together properly so that they may be connected in parallel.

28. Arc Welding.

the Metal is fused together by the heat of the electric arc.

M. E. Swift '28.

M. E. Swift '29.

29. Musical Door Bell.

The push button sets apparatus playing a tune which is much more cheerful than a jangling bell. Try it.

R. D. Merrill '29.

30. Calibration of Watt Hour Meters.

Practical testing of watt-hour meters. See how your electric light meter is checked up and corrected.

H. N. Jaskowski '28.

31. Hand Generator.

Test your strength! See how many lamps you can light.

W. E. Haselwood '29.

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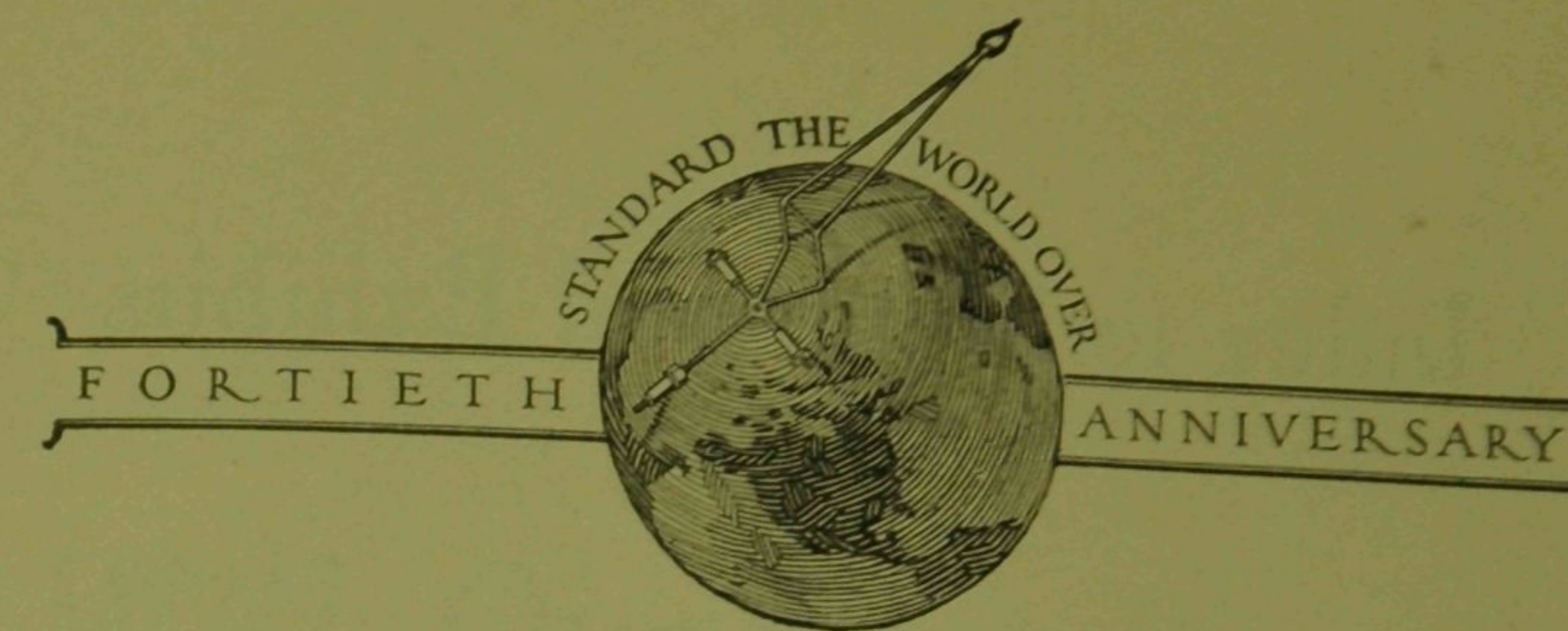
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Meet Us At Exhibit No. 33



What Price, Progress?

Electrical measuring instruments are more than material objects to the experimental engineer. His constant companions through long hours of research and laboratory solitude, he forms a certain attachment for his instruments—comes to understand their individual characteristics, and to depend upon them, as faithful lieutenants, in the accomplishment of his dearest objectives.

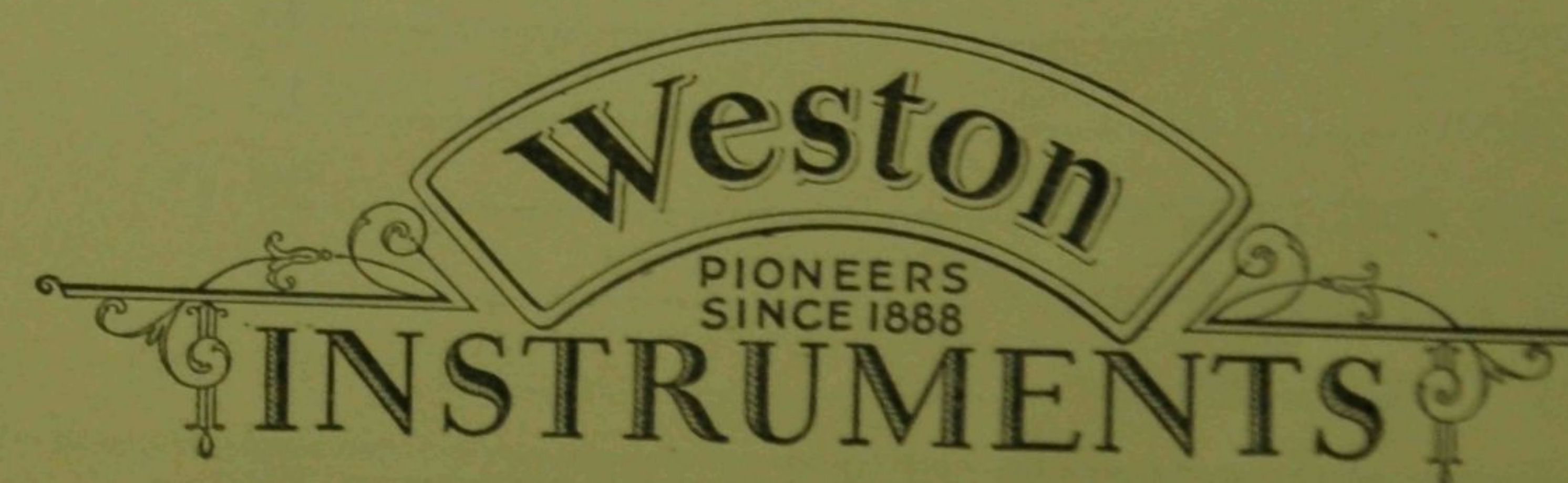
A highly sensitive instrument surpasses human analogy—and is more to be compared with some occult or mystic agency. Where the mind of the scientist is unable to penetrate the mysteries of electrical phenomena, there is now available a great variety of special instruments which reveal the essential facts—however minute the quantities involved—by means of which theory succeeds to discovery and useful knowledge is added to the store of human attainments.

All of which means that science inevitably turns to Weston, just as the compass needle turns to the North, whenever there develops a new or special requirement in instrument design for some important task.

We cordially invite you to visit the Weston Exhibit (Number 3) where the latest developments of interest to scientific investigators are on display.

Weston Electrical Instrument Corporation

Frelinghuysen Ave., Newark, N. J.



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and Heartiest
Good Wishes
to the Entire Staff
of the
E. E. Show*

Cook & Flynn
Paul Prehn
Bailey & Himes

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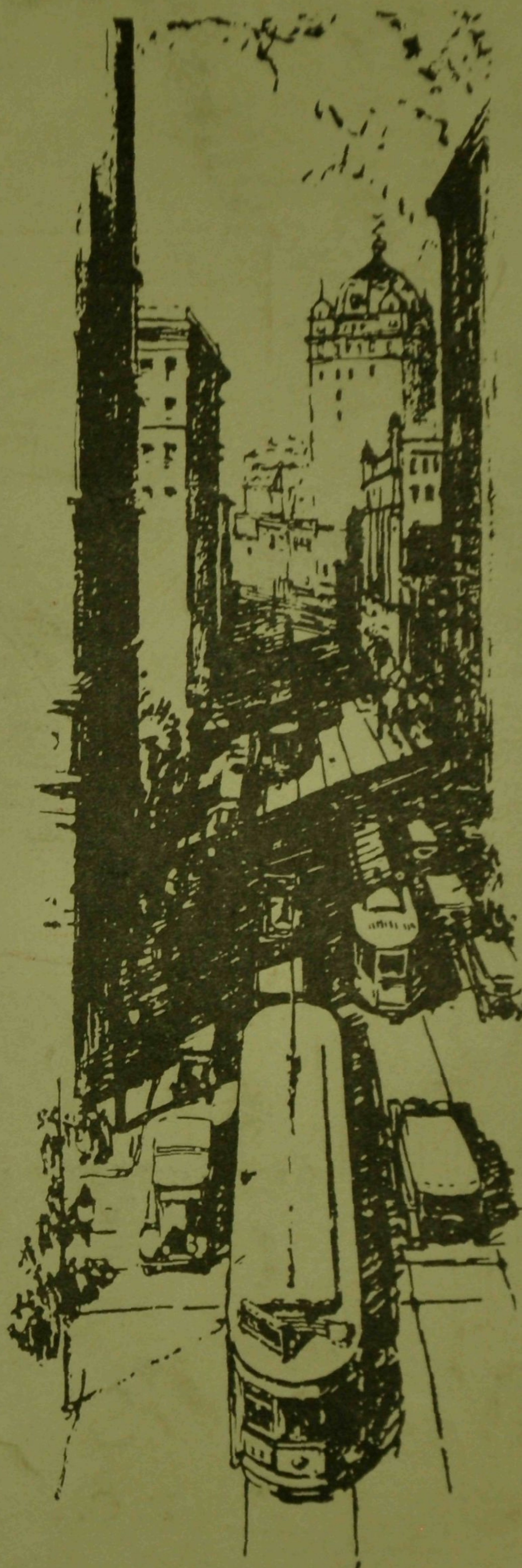
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electric cars
will clear the
streets as fast
as skyscrapers
fill them . . .*

Transportation in large cities, says a well-known traffic authority, is a race between the street-car and the skyscraper. For as office buildings tower higher and higher, as more and more people are crowded into a fixed area, traffic becomes constantly more congested.

Only the electric railway, because of its ability to carry crowds in units of from 50 to 100, can clear the streets as rapidly as the skyscrapers fill them. People can go one by one on foot and two by two on wheels, but when they must move in large masses, they must move along tracks — or in motor busses.

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Westinghouse can supply all the electrical equipment needed by a street-car system from power house to trolley wheel. Westinghouse equipment is found on almost every electric railway in the United States.

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